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ABSTRACT

A study was conducted to determine how fitness scores may be affected by varying the method of administration. Five fitness tests were administered to 426 children in grades 1-3. The children were randomly assigned to one of three treatment groups: traditional instruction, competition, and encouragement. The testing team administered five fitness tests: 40-yard dash, sit-ups in 60 seconds, shuttle run, standing long jump, and flexed arm hang. Results indicated that fitness scores were affected by altering the testing environment. Significant findings include: (1) when comparing a combination of the three grades, both the competition and encouragement groups achieved better results than the traditional instruction group in each fitness test; (2) the method of administering the 40-yard dash is immaterial until third grade when either competition or encouragement can improve scores; (3) encouraging first-grade children during a sit-up test or a shuttle run can improve performance; and (4) by third grade, using either competition or encouragement as a motivator can dramatically improve scores in a 40-yard dash, sit-ups, shuttle run, and flexed arm hang. It appears that physical fitness educators can influence fitness scores by the method used to motivate children before and during testing. (IAH)

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A COMPARISON OF FITNESS TEST ADMINISTRATIVE METHODS

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A study was conducted to determine how fitness scores may be affected by varying the method of administration. Five fitness tests were administered to 426 children in grades 1-3. The testing team consisted of 12 undergraduate students at the University of Delaware.

The children were randomly assigned to one of three treatment groups, namely: (1) Traditional Instruction, (2) Competition, and (3) Encouragement. The testing team administered five fitness tests: (1) 40 yard dash, (2) sit-ups in 60 seconds, (3) shuttle run, (4) standing long jump, and (5) flexed arm hang.

The results indicated some significant differences between the three treatment groups. Fitness scores of children were affected by altering the testing environment.

1. When comparing a combination of the three grades, both the competition and encouragement groups achieved significantly better results than the traditional instruction group in sit-ups, shuttle run, and flexed arm hang.
2. The method of administering the 40 yard dash was immaterial until third grade, when both competition and encouragement significantly improved scores.
3. Encouraging first grade children during the bent-knee sit-up test significantly improved performance. Both competition and encouragement attained significant results in sit-ups by second and third grades.
4. In the shuttle run, encouragement was most effective for first and second grade, while competition was most effective for third grade.
5. The method of administering the standing long jump test had no effect on scores.
6. Encouraging second and third grade children during the flexed arm hang had a significant effect on performance.
7. By the third grade, using either competition or encouragement as a motivator dramatically improved scores in the 40 yard dash, sit-ups, shuttle run, and flexed arm hang.

Based upon the findings of this study, it appears that physical educators can influence fitness scores by the administrative method used during testing. If national norms are established in a non-competitive environment, then fitness tests should be administered at the grass roots level in the same manner.

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How accurate are your physical fitness test results? Are you obtaining true readings of children's fitness levels when scores are compared to normative data? Fitness scores may be meaningless if the method of administration is not consistent with the testing atmosphere when norms were established. For example, data for the National Children and Youth Fitness Studies I and II (Ross et al., 1985) were gathered by a small, traveling field staff of trained professionals to assure reliability. The specialists administered the tests to students one-on-one in a non-competitive atmosphere (Ross and Pate, 1987).

Are you guilty of providing a competitive atmosphere during fitness testing? Do children compare their test scores with each other? How much motivation and encouragement is given to children both before and during the test? To what extent do such variables as competition and encouragement have upon fitness scores?

Procedures

A study was conducted to determine how fitness scores can be affected by varying the method of administration. Five fitness tests were administered to 426 children in grades 1 through 3. The testing team consisted of 12 undergraduate student teachers at the University of Delaware. The students participated in a training session to learn the specific procedures prior to actual testing.

The children were randomly assigned to one of three treatment groups and received the following specific instructions:

Group I - Traditional Instruction

"You are being tested to see how fit you are. Try to do your best." The instructor remained quiet during the performance phase of the test.

Group II - Competition

"You are being tested to see how fit you are. Your score will be compared to your classmates and to students at other schools. Try to do your best." The instructor remained quiet during the test.

Group III - Encouragement

"You are being tested to see how fit you are. Try to do your best." During the performance phase, the instructor acted as a cheerleader by giving constant encouragement, motivation, and praise in an attempt to get the child's best effort.

Each child was tested one at a time, while the remainder of the class participated in an activity with another teacher. This procedure removed the variable of a child being tested in the presence of classmates which often influences results.

Test Items

The testing team administered five fitness tests, namely: (1) 40 yard dash, (2) sit-ups in 60 seconds, (3) shuttle run, (4) standing long jump, and (5) flexed arm hang. Brief test descriptions follow:

40 yard dash - The child attempted to run as fast as possible from behind a starting line through a 40 yard distance and past a finish line. All children ran on a grass surface and scores were recorded to the nearest tenth of a second.

Sit-ups in 60 seconds - The child lies supine with knees bent, feet on the floor, and arms crossed. The feet were held down by the instructor, keeping elbows against the chest, the child raises up touching elbows to thighs. The number of complete sit-ups in 60 seconds was recorded.

Shuttle-run - Two parallel lines were marked on the floor twenty feet apart. Two blocks of wood were placed behind one line. The child runs from one line to the opposite line, picks up one block, returns it to the starting line placing the block behind the line, then repeats the same action with the second block. All children had one trial and scores were recorded to the nearest tenth of a second.

Standing long jump - With the feet parallel and behind a starting mark, the child attempted to jump as far forward as possible. The best of three trials was recorded and distance was measured to the nearest inch.

Flexed arm hang - The child was lifted to the horizontal bar, chin over the bar with an overhand grasp. The child held this position and time was stopped when the chin dropped below the bar. Time was recorded to the nearest second.

The testing team explained and demonstrated each test item to all the children. If a child did not clearly understand a test item during the performance phase, the child was re-tested.

Results

The results indicated some significant differences between the three treatment groups. The fitness scores of children were

affected by altering the testing environment. The following statements specify how fitness scores were influenced.

1. When comparing a combination of the three grades, both the competition and encouragement groups achieved better results than the traditional instruction group in each fitness test.

2. The method of administering the 40 yard dash is immaterial until third grade, when either competition or encouragement can improve scores (See Table 1).

3. Encouraging first grade children during a sit-up test or a shuttle run can improve performance (See Tables 2 and 3).

4. By the third grade, using either competition or encouragement as a motivator can dramatically improve scores in a 40 yard dash, sit-ups, shuttle run, and flexed arm hang.

Conclusion

It appears that physical educators can influence fitness scores by the method used to motivate children before and during testing. A convincing example can be seen in the bent knee sit-up test (See Table 2). Third grade children averaged 24 sit-ups through traditional instruction. The NCYFS II (Ross et al., 1987) norms place eight year old boys at the 40th percentile and girls at the 45th percentile when performing 24 sit-ups. However, both competition and encouragement methods increased performance to approximately 33 sit-ups, a gain to the 85th percentile on the NCYFS II norms.

Petray et al. (1989) suggest that a non-competitive, self-evaluation atmosphere be established in a testing situation.

Since national norms are set in a non-competitive environment, then fitness tests should be administered at the grass roots level in the same manner.

TABLE 1. Comparison of 40 Yard Dash Scores by Grade and Combining Grades (in seconds)

	Treatment Group	1	2	3	Combining Grades
I	Traditional Instruction	9.57	8.89	8.59	9.07
II	Competition	9.54	8.78	7.93*	8.82
III	Encouragement	9.60	8.73	8.04*	8.86

TABLE 2. Comparison of Bent-Knee Sit-Ups by Grade and Combining Grades (number in 60 seconds)

	Treatment Group	1	2	3	Combining Grades
I	Traditional Instruction	17.58	21.45	24.22	20.76
II	Competition	17.56	27.92*	32.68*	25.28*
III	Encouragement	21.51*	28.07*	33.31*	27.08*

TABLE 3. Comparison of Shuttle Run Scores by Grade and Combining Grades (in seconds)

	Treatment Group	1	2	3	Combining Grades
I	Traditional Instruction	11.45	10.96	10.42	10.98
II	Competition	11.04	10.58	9.46*	10.41*
III	Encouragement	10.63*	10.42*	9.83*	10.32*

TABLE 4. Comparison of Standing Long Jump Scores by Grade and Combining Grades (in inches)

	Treatment Group	1	2	3	Combining Grades
I	Traditional Instruction	40.43	45.74	49.85	44.90
II	Competition	40.39	45.91	50.26	45.06
III	Encouragement	40.81	46.06	51.32	45.59

TABLE 5. Comparison of Flexed Arm Hang Scores by Grade and Combining Grades (in seconds)

	Treatment Group	1	2	3	Combining Grades
I	Traditional Instruction	5.62	7.14	9.22	7.17
II	Competition	5.49	7.38	11.37*	7.85*
III	Encouragement	5.71	8.02*	12.09*	8.35*

* Significant difference at .05 level when compared to traditional instruction group.

REFERENCES

Petray, C., Blazer S., Lavay, B., and Leeds, M. (1989). Designing the fitness testing environment. Journal of Physical Education, Recreation, and Dance, 60 (1), 35-38.

Ross, J. and Pate, R. (1987). The national children and youth fitness study II: A summary of findings. Journal of Physical Education, Recreation, and Dance, 58 (9), 51-56.

Ross, J., Pate, R., Delpy, L., Gold, R., and Svilar, M. (1987). The national children and youth fitness study II: New health - related fitness norms. Journal of Physical Education, Recreation, and Dance, 58 (9), 66-70.